90. For all of these reasons, CLECs will invariably be unable to provide a DSL service that operates with "the same level of quality" as that provided by the ILEC or its data affiliate employing next generation architecture if the CLECs must rely on home run copper.

VI. CONCLUSION

91. While next-generation RT architecture greatly enhances the functionality of the local loop, it does not change the basic functionality of the loop *at all*. Since the 1960s, ILECs have sought to enhance transmission functionalities of the loop for voice service by: 1) decreasing reliance on the copper segment of the loop; 2) adding multiplexers, remote terminal and central office electronics; and 3) increasing the use of fiber-plant from the remote terminal to the central office. The RT developments occurring today merely represent the next logical step in this process, namely, enhancing the transmission functionalities of the loop to efficiently accommodate voice and data telecommunications services. Like the enhancements made to traditional architecture, these next generation RT developments enable ILECs to modify their loops to enhance transmission functionality even further by: 1) continuing to decrease the length of copper subloops; 2) moving more loop electronics from the central office to the remote terminal and adding more transmission enhancing electronics at the central office; and (3) increasing the uses and capabilities of fiber between the remote terminal and central office to transmit all of the customer's traffic in an efficient manner. None of these modifications, however, alter the basic transmission functionalities of the loop. Accordingly, all of these developments constitute capabilities of the local loop that competitors need -- and are entitled -- to access. In sum, there is simply no other viable option available to the CLECs that can support mass-market competition.

EXHIBIT A

EXHIBIT A - IDLC/UDLC LOOP ARCHITECTURE

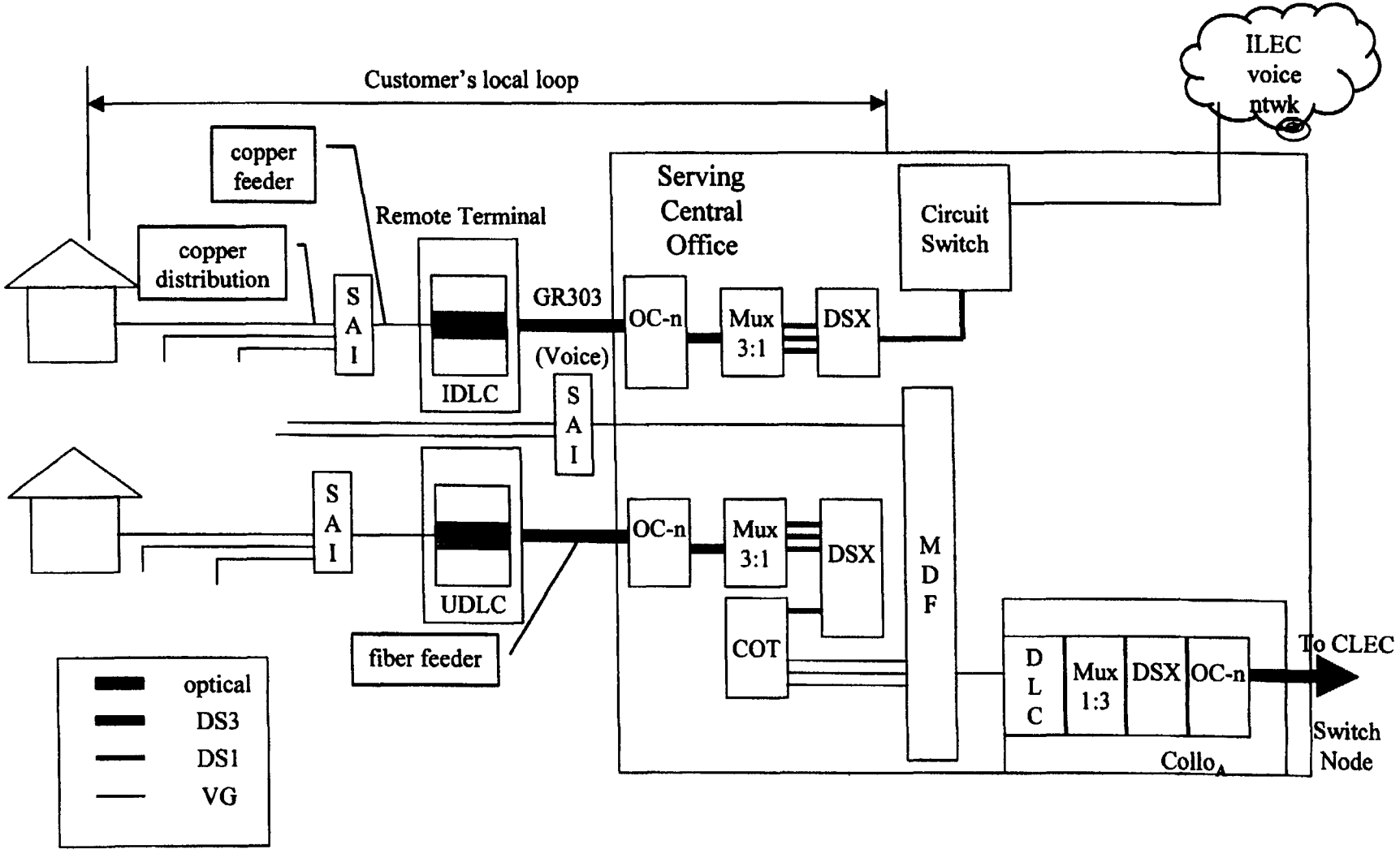


EXHIBIT B

EXHIBIT B - Remote Terminals

1. The remote terminal may be a controlled environmental vault ("CEV"), a hut, or a cabinet. A CEV is a structure that is below ground, similar to a manhole, *i.e.*, a pre-cast rectangular concrete box (Maxi = 10'W x 24'L x 8'H, Mini = 8'W x 16'L x 8'H) that is assembled from two parts (a top and a bottom) which allows the placement of an equipment pallet into the bottom portion prior to final assembly.

2. Generally a hatch type assembly at one end on top permits entry, while conduits enter the structure at the ceiling level on the short wall opposite the entry space. The "short" walls (which are the width of the rectangle) usually contain various mountings such as a breaker panel and environmental detectors (such as a smoke alarm, temperature alarm, etc.) at the entry end and only conduits on the opposite end. The "long" walls on the other hand are typically occupied with relay racks for electronics. Opposite the electronics are protector terminations for the copper cable pairs arriving from the Feeder Distribution Interface ("FDI" —the interface between feeder and distribution cables) which in turn are hardwired overhead to the electronics. Fiber feeder cables transporting the signals back to the central office enter the CEV via the same conduit window and are terminated in close proximity to the multiplexer/common control assembly of the electronics.

3. A hut is an above-ground, prefabricated concrete structure with dimensions of approximately 10'W x 24'L x 8'H (Maxi) or 8'W x 16'L x 8'H (Mini). The structure can have various facades (e.g. rough pebble, brick or wood) as surrounding architecture dictates. These structures usually contain sufficient relay racks to accommodate designed DLC requirements

and ancillary hardware (e.g. Bulk Power, Protector Distribution Frame, Repeater Shelves, etc.) Huts are generally not located in buildings but rather are located in the field.

4. A cabinet is a small weatherproof metal enclosure used to house DLC equipment. Cabinets contain heat exchangers to help dissipate heat from the structure without introducing outside air to the equipment chambers. While there are a number of different manufacturers, the cabinets are normally sized to contain sufficient DLC systems and ancillary hardware to support the engineering design. Typically, the dimensions are 112"W x 46"L x 72"H, 93"W x 46"L x 72"H, or 44"W 42"L x 72"H. Cabinets are accessible from the front and rear for shelf assemblies, and at the end(s) for splice/power chamber and terminations. Cabinets are generally not located in buildings but rather are located in the field.

5. A Cabinet is generally used to serve a range of 24 to 2,016 lines, although this range varies based on development in plug-in cards and the ability to expand a cabinet's capacity with adjacent structures. Cabinets are the smallest structures used as remote terminals, and also, by far, the most common.

EXHIBIT C

Exhibit C - Next-Generation Loop Architecture

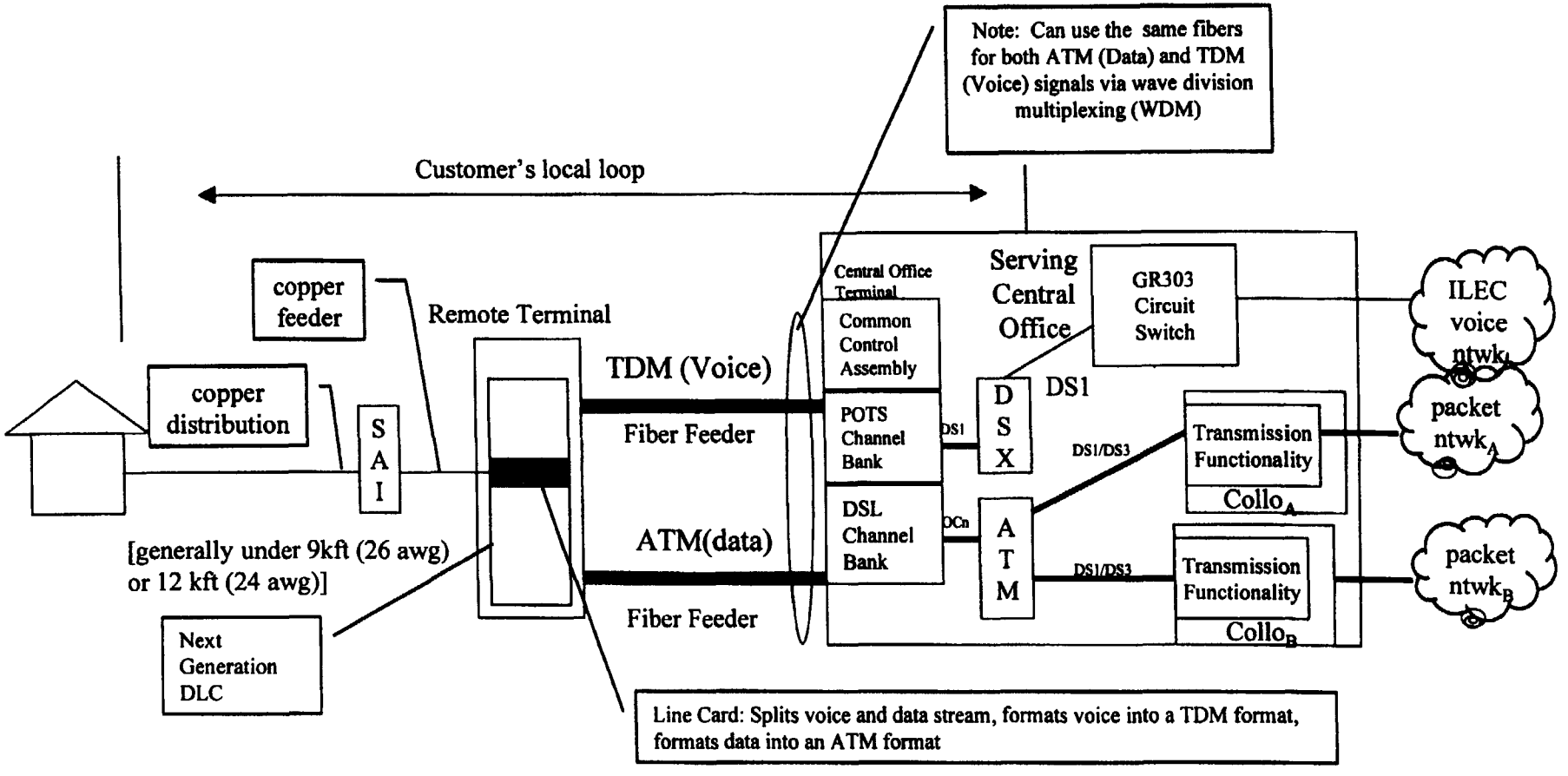
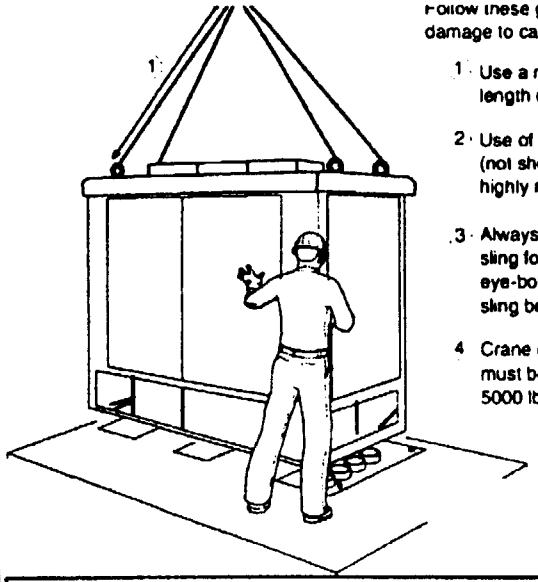


EXHIBIT D

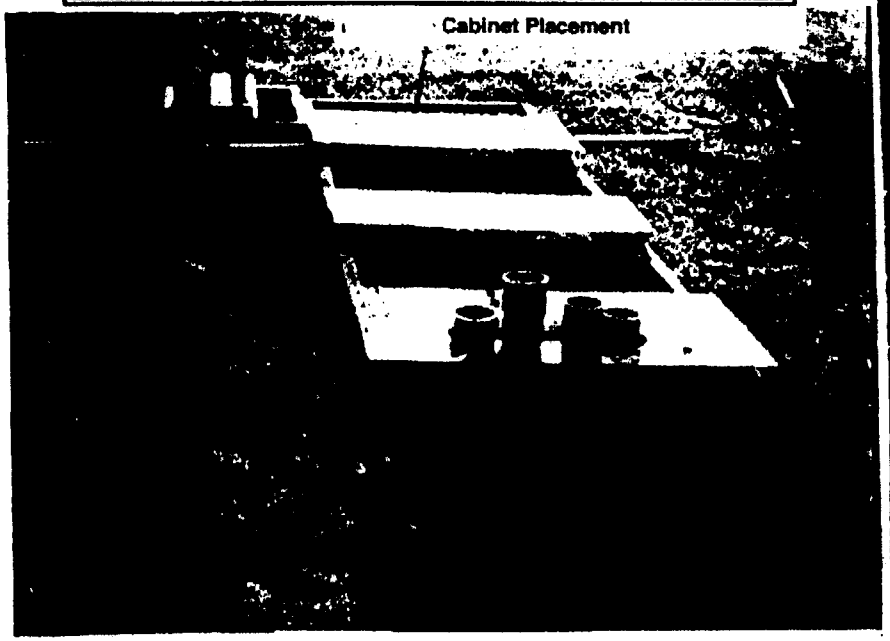


Follow these guidelines to prevent damage to cabinet when lifting.

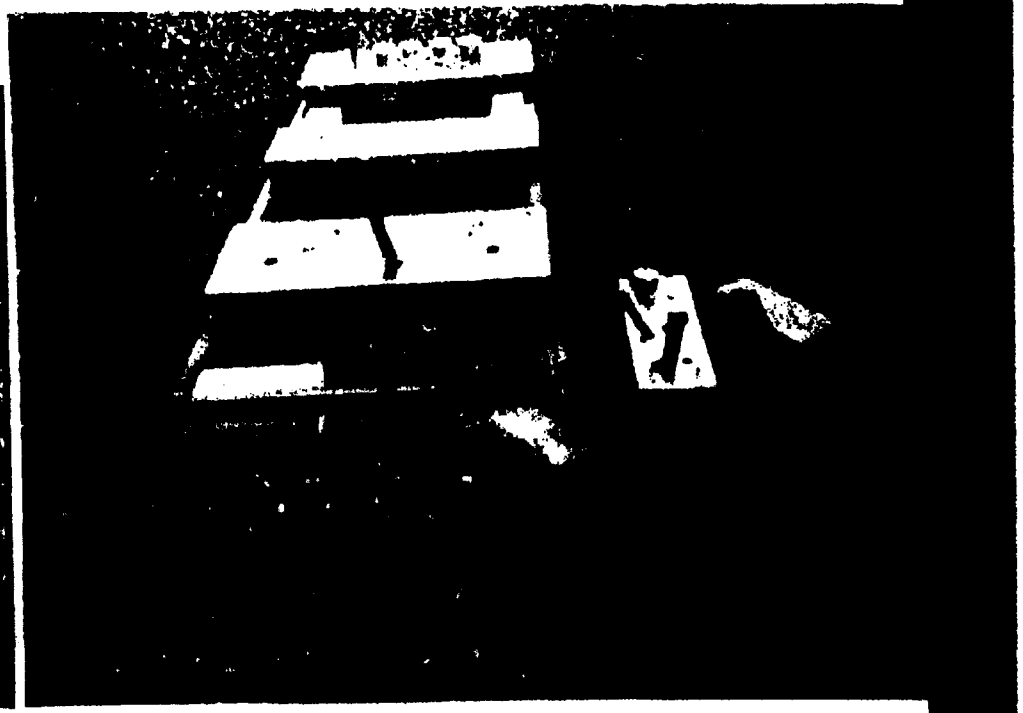
1. Use a minimum sling length of 8 feet.
2. Use of a spreader bar (not shown here) is highly recommended.
3. Always use a separate sling for each cabinet eye-bolt. Never loop a sling between eye-bolts.
4. Crane or derrick used must be rated for at least 5000 lbs.

Note: Once the cabinet is anchored to the pad, the telco and fiber-optic cables may be run into the cabinet. This is done by removing the boots inside the cabinet and feeding the cables through the conduit.

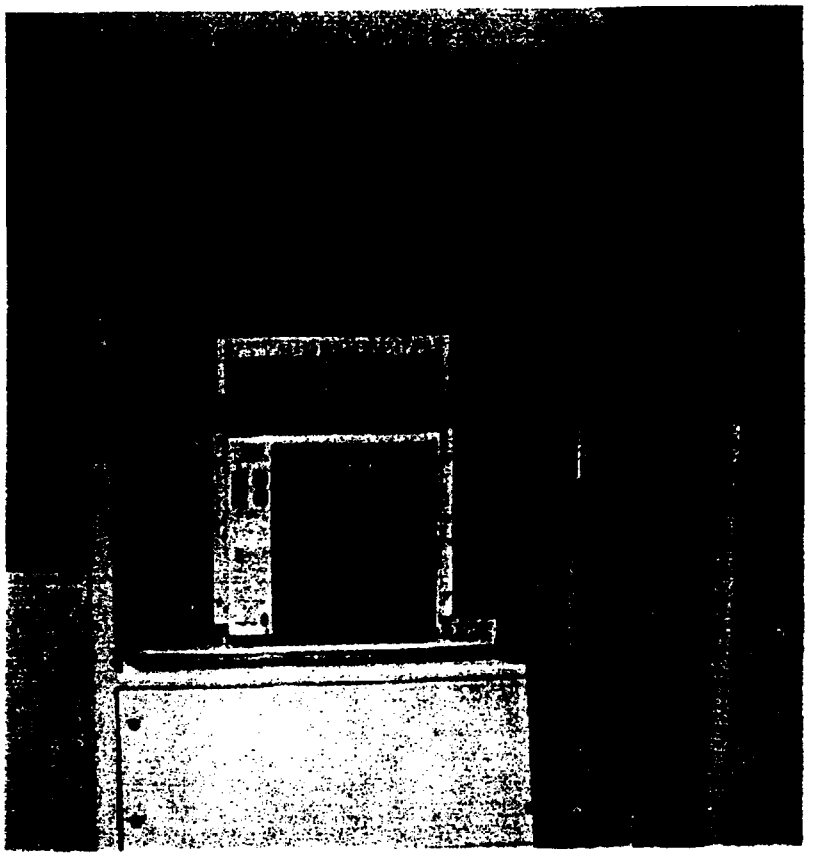
Cabinet Placement



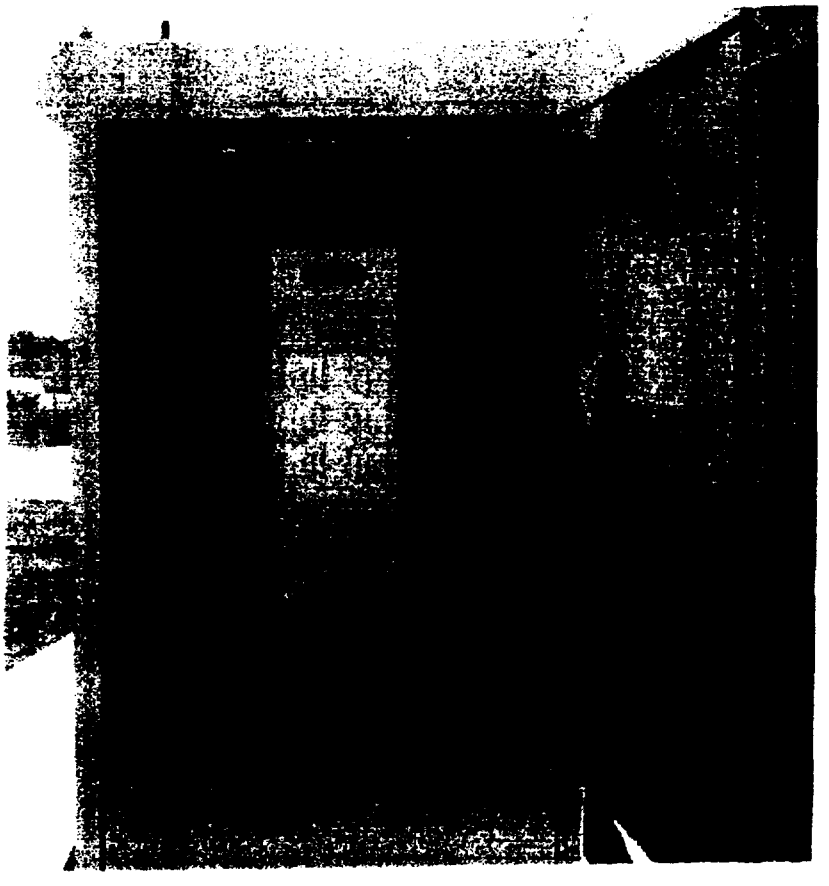
Cable Conduit Trench Detail



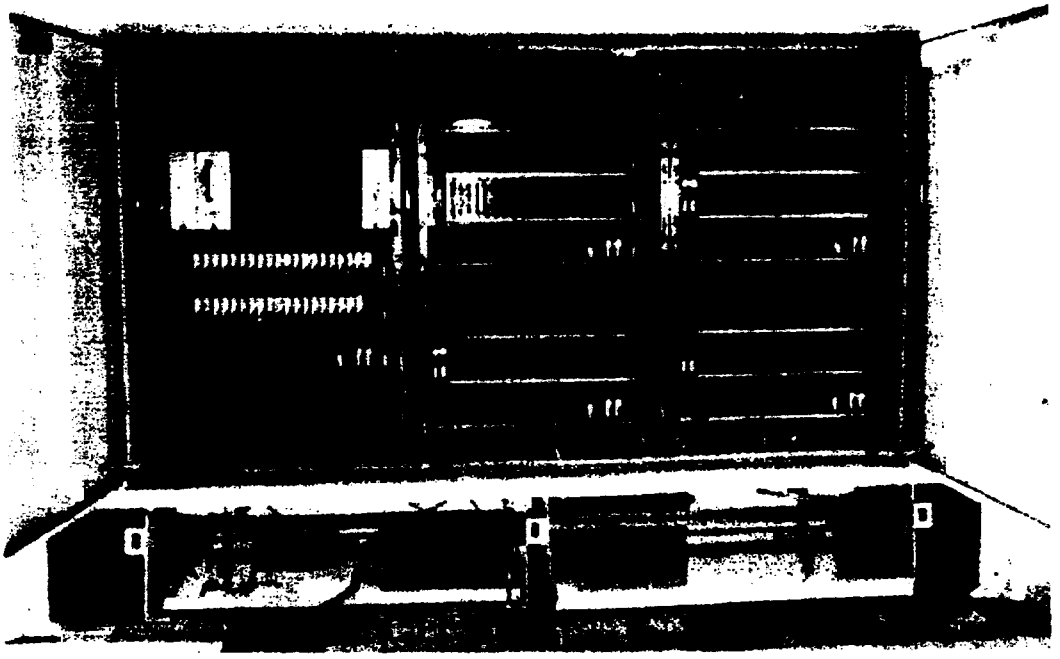
Template Placement and Leveling Detail



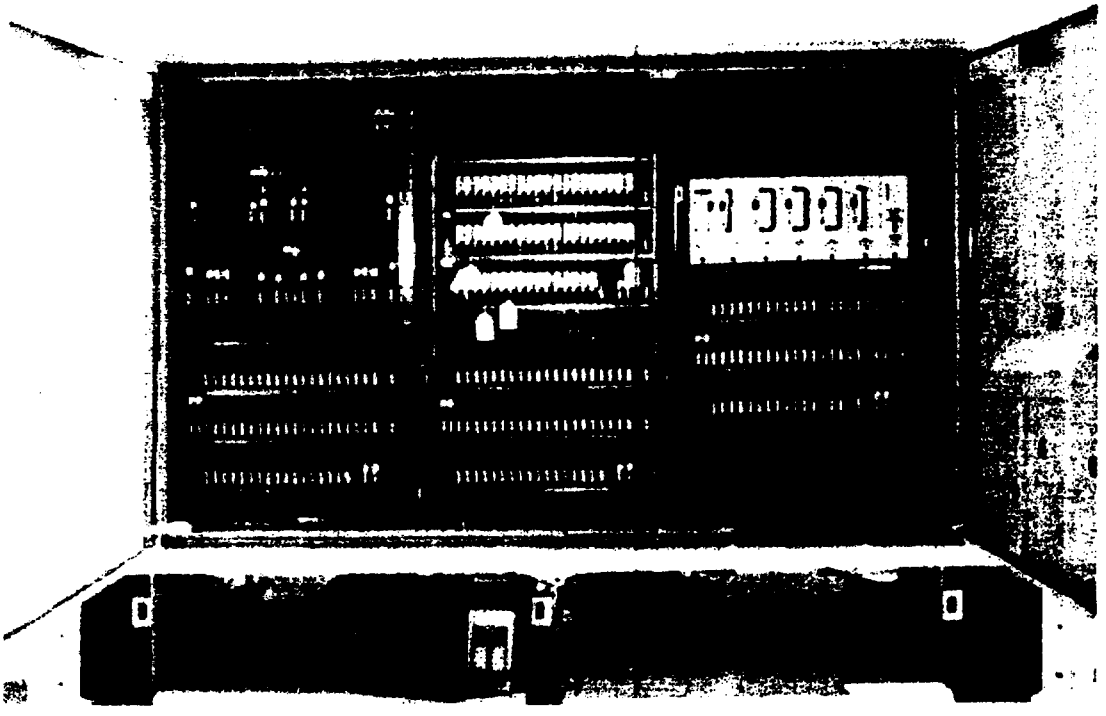
Cabinet (AC Load Center View)



Cabinet (Splice Chamber View)

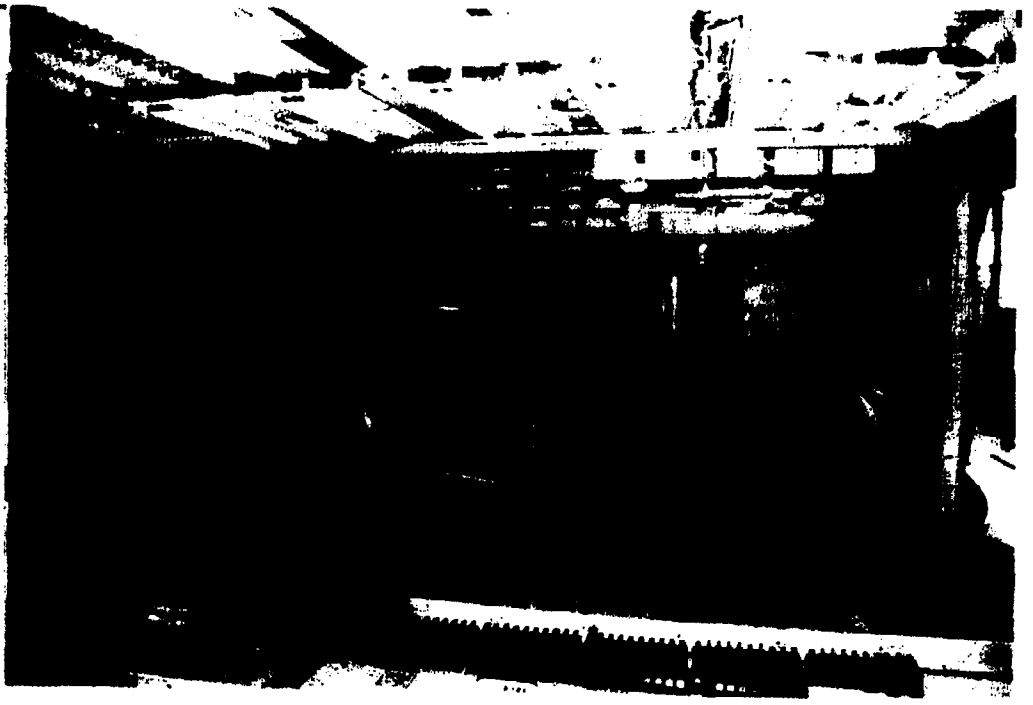


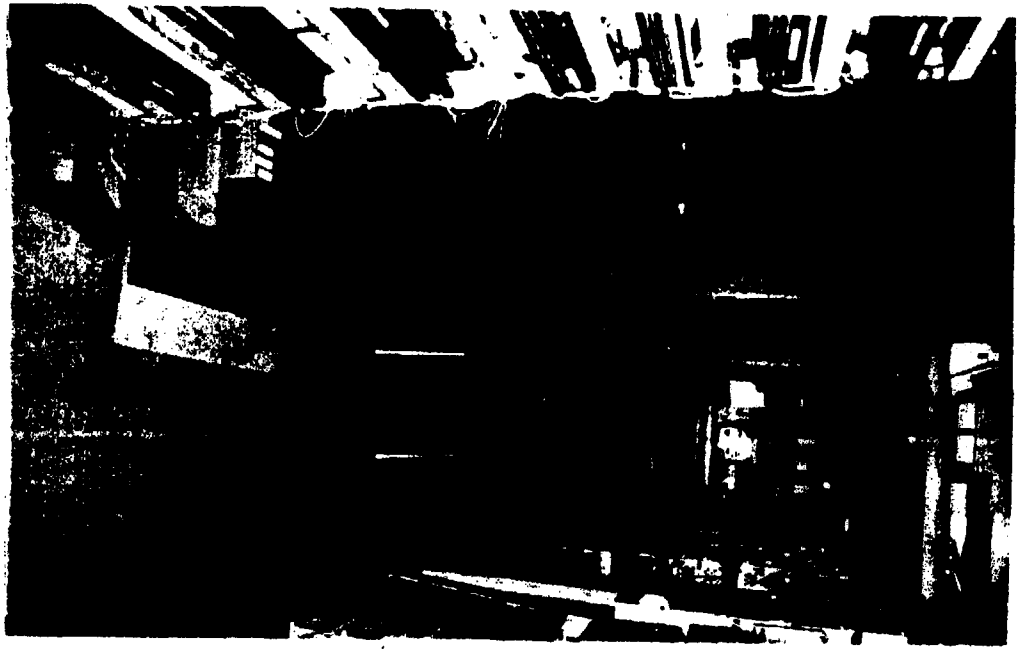
Cabinet (Side 2 View)



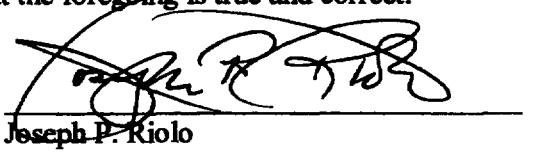
Cabinet (Side 1 View)

EXHIBIT E





I declare under penalty of perjury that the foregoing is true and correct.



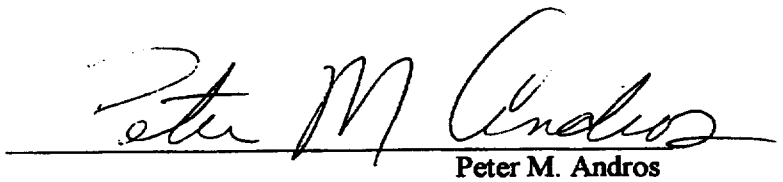
Joseph P. Riolo

Dated: This 12 day of October, 2000

CERTIFICATE OF SERVICE

I hereby certify that on this 12th day of October, 2000, I caused true and correct copies of the forgoing Comments of AT&T Corp. to be hand-delivered for filing with the Federal Communications Commission to the persons below.

Dated: October 12, 2000
Washington, D.C.



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ATTACHMENT 4

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matters of	)	
	)	
Deployment of Wireline Services Offering Advanced Telecommunications Capability	)	CC Docket No. 98-147
	)	
and	)	
	)	
Implementation of the Local Competition Provisions in the Telecommunications Act of 1996	)	CC Docket No. 96-98

REPLY COMMENTS OF AT&T CORP.

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November 14, 2000

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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	)	
and	)	
	)	
Implementation of the Local Competition Provisions in the Telecommunications Act of 1996	)	CC Docket No. 96-98

REPLY COMMENTS OF AT&T CORP.

Pursuant to the Commission's Public Notice, DA 00-2036, released September 6, 2000, AT&T Corp. ("AT&T") submits these reply comments in response to the Commission's Second Further Notice of Proposed Rulemaking in CC Docket No. 98-147 and Fifth Further Notice of Proposed Rulemaking in CC Docket No. 96-98 ("FNPRM").

INTRODUCTION AND SUMMARY

The broad range of responses to the Commission's Notices confirms both the critical importance of this proceeding and the path the Commission should take in resolving it. The issues raised in this rulemaking are of central importance to the development of competition in telecommunications markets, for both traditional and advanced services. With the exception

of some of the incumbent monopolists, whose objective is to prevent or impede such competition, all commenters agree on the need for the Commission to adopt national rules to implement the collocation, interconnection, and network element requirements of the Act.

Part I of these Reply Comments addresses the need for national rules that allow competitive LECs to collocate equipment that performs transmission, switching, and surveillance functions. As the opening comments demonstrate, the D.C. Circuit's decision did not foreclose such rules; to the contrary, it remanded the proceeding precisely so that the Commission could conduct this very inquiry. The D.C. Circuit invalidated the Commission's prior interpretation of "necessary" to mean "used and useful" because it concluded that the prior interpretation lacked any limiting principle and would permit the collocation even of non-telecommunications functions like payroll or data collection. The Court did not, by contrast, question the Commission's authority to order collocation of any specific telecommunications functionalities, so long as the Commission gave the statute a reasonable interpretation and provided a "better explanation" for its decision.

The comments in this proceeding provide abundant legal and factual bases for such a decision. In particular, the comments support the three important principles that AT&T identified in its opening comments and that should be used to define the scope of competitive LECs' rights to collocate equipment. First, contrary to the incumbent LECs' pervasive and mistaken assumption, collocation duties extend beyond the establishment of mere physical "connections" to the incumbent LECs' networks, because the Commission has expressly defined "interconnection" and "access" more broadly to include interconnection "equal in quality" to that which the incumbent provides to itself, and access sufficient to "use" all of the "features, functions, and capabilities" of a network element. Second, the statutory term "necessary" must

include, at a minimum, situations in which, absent the ability to collocate particular equipment, (1) competitive LECs would be precluded from providing at least some services to at least some customers through the use of unbundled network elements or interconnection, or (2) the competitive LECs could not offer service of the same quality as the incumbent through the use of unbundled network elements or interconnection. Third, because the Act requires that collocation be made available on terms and conditions that are "just, reasonable, and nondiscriminatory," where equipment has functionalities and capabilities that are necessary for interconnection or access to unbundled network elements, incumbents may not deny collocation of additional functionalities in multifunctional equipment that does not consume any appreciable additional space.

These principles strongly support rules specifying that incumbents must permit the collocation of equipment that performs transmission, switching, and surveillance functionalities. For example, with respect to transmission functionalities, collocation is plainly "necessary" to competitive entry, because the only alternative would be to engage in a prohibitively expensive deployment of interoffice transport facilities. Collocation of packet switching is likewise necessary because packet switches perform a number of critical transmission functions, and also because packet switching functions are routinely integrated into a single piece of equipment that performs transmission functions. Indeed, if the Commission were to conclude otherwise, it would have to reconsider its decision not to order the unbundling of packet switches under Section 251(d)(2) of the Act, because that decision was premised on the finding that competitive LECs would be able to collocate packet switches under Section 251(c)(6). The Commission should also require collocation of circuit switch functionality, which can be "necessary" to a carrier's ability to serve more rural and heavily residential offices and to

compete in other circumstances as well. And, as the comments confirm, requirements that CLEC-to-CLEC cross connects be permitted is similarly both consistent with the terms of the Act and would advance its procompetitive purposes.

The comments also overwhelmingly confirm that competitive LECs must continue to have the ability to access the full features, functions, and capabilities of incumbent LECs' loops. The deployment of "next-generation" loop technologies and architectures does not alter the fundamental legal and policy principles that have guided the Commission's definition of the local loop network element. Nor does the new architecture diminish (indeed, it heightens) the competitive LECs' need for access to the entire loop. These issues are addressed in Parts II, III, and IV.

The record leaves no doubt that the loop remains the quintessential bottleneck facility. The essential function of the loop is to provide transmission functionality between a customer's premises and an incumbent LEC's central office, not between the customer's premise and an intermediate point such as a remote terminal. As many comments explain, the availability of the unbundled loop functionality is not limited to use for particular services or to the capabilities of specific technologies. Thus, the record confirms the continuing need for an unbundled loop element that consists of all features, functions, and capabilities that provide transmission functionality between a customer's premises and the central office, regardless of the technologies used to provide, or the services offered over, such facilities.

The addition of next-generation electronics in the incumbent LECs loop plant enables greater bandwidth to be transmitted between the customer's premises and the central office, but it does *not* change the loop's basic function of supplying transmission between the

customer premises and the incumbent LEC's central office. And the central office remains the place where competitive LECs can practically and economically obtain access to their customers' telecommunications transmissions so they are able to provide the telecommunications services of their choosing. Unless competitive LECs can obtain access to their customers' bits at the central office, competition – particularly for mass-market services -- will be seriously jeopardized.

The comments clearly support AT&T's showing that no type of remote collocation -- whether physical, adjacent, or virtual -- can support broad-based competition or provide a viable basis for an exception to the incumbent LECs' existing loop unbundling obligations. Physical collocation at the remote terminal is precluded by lack of space and economic unsustainablity. "Adjacent" collocation is impractical and even more costly than physical collocation. As for "virtual" collocation, although the ILECs disagree among themselves, the comments from competitive LECs and from manufacturers demonstrate forcefully why this is no substitute for access at the central office.

The comments also prove that neither access to spare copper nor an incumbent LEC's offering of a "broadband service" is a viable substitute for competitive LEC access to the entire loop, especially for the purpose of delivering a full array of telecommunications services to residential consumers. As even incumbent LECs' concede, reliance on spare copper will not support the high-bandwidth services that consumers increasingly demand. Incumbent LECs' offers of a "broadband service" represent a tacit admission that competitive LECs need access to the functionalities of the entire unbundled loop in the NGDLC architecture, but competitors require the full legal protections afforded by Section 251(c)(3) regarding *network elements*, not some lesser substitute.

The Commission's rules should be adjusted to recognize that the DSLAM's pure multiplexing functionality – especially when deployed in a remote terminal loop architecture – is part of the local loop element. In contrast to the assumption in the *UNE Remand Order,* DSLAMs do not perform packet-switching. AT&T, other carriers, and equipment manufacturers have all demonstrated that a DSLAM performs *only* transmission-related functions. Thus, the current definitions of the local loop and packet switching elements miscategorize the functionality of the DSLAM and -- especially as applied to next-generation loop architecture -- they undermine the procompetitive purpose of the Commission's unbundling rules.

AT&T believes that the Commission should correct this mistake of fact across the board. At a minimum, however, in developing unbundling rules that are applicable to next-generation loop architecture, the Commission must closely examine the incumbent LECs' use of DSLAM functionality in a remote terminal. Critically, the Commission must recognize that failure to require unbundled access to DSLAM functionality in next-generation loop plant would make it virtually impossible for competitive LECs to provide packet-based services and entirely undermine the assumptions underlying the Commission's decision not to unbundle packet switching.

Consistent with the comments of other competitive carriers, incumbent LECs should be required to retain unused copper for a reasonable period of time; to provide advance notice of plans to retire or replace copper; to identify the availability of spare copper; and to consider the availability of spare copper when competitors request a UNE loop. The comments also demonstrate a need for the Commission to modify its existing collocation rules to require neutral space usage and reservation practices, encourage industry-wide resolution of OSS concerns, ensure that collocation rates are consistent with the Commission's pricing policies, and